Amendments to the Claims:

1. (Currently Amended) A friction stir welding system comprising:

a friction stir welding (FSW) device comprising an actuator ~~capable of~~ configured for moving a FSW tool relative to a workpiece, wherein the actuator comprises a plunge actuator ~~capable of~~ configured for moving the FSW tool along a plunge axis; and

a controller ~~capable of~~ configured for controlling the FSW device to drive the actuator to move the FSW relative to the workpiece such that the FSW tool is ~~capable of~~ configured for performing a friction stir welding operation on the workpiece, wherein the controller is ~~capable of~~ configured for monitoring a torque of the actuator in accordance with one or more numerical control instructions designed for machining components, wherein the controller is ~~capable of~~ configured for controlling the FSW device to drive the actuator such that the torque is maintained within a range about a torque setting, and wherein the controller is ~~capable of~~ configured for controlling the FSW device such that the plunge actuator is driven to move the FSW tool into further contact with the workpiece when the torque decreases below a range about a plunge torque setting, and driven to move the FSW tool into reduced contact with the workpiece when the torque increases above the range about the plunge torque setting.

2. (Cancelled)

3. (Currently Amended) A friction stir welding system according to Claim 1, wherein the controller is ~~capable of~~ configured for controlling the FSW device such that, when the torque decreases below the range about the plunge torque setting, the plunge actuator is driven to move the FSW tool into further contact with the workpiece until one of the torque increases to within the range and the FSW tool has moved more than a defined distance along the plunge axis.

4. (Currently Amended) A friction stir welding system according to Claim 1, wherein the actuator comprises at least one weld actuator ~~capable of~~ configured for moving the FSW tool along a weld path, wherein the controller is ~~capable of~~ configured for controlling the

FSW device such that the at least one weld actuator is driven to move the FSW tool with increased speed along the weld path when at least one torque of the at least one weld actuator decreases below a range about at least one weld torque setting, and driven to move the FSW tool with decreased speed along the weld path when the at least one torque increases above the range about the at least one weld torque setting.

5. (Currently Amended) A friction stir welding system according to Claim 1, wherein the actuator comprises a spindle actuator ~~capable of~~ configured for rotating the FSW tool relative to the workpiece, wherein the controller is ~~capable of~~ configured for controlling the FSW device such that the spindle actuator is driven to rotate the FSW tool with decreased rotational speed relative to the workpiece when the torque decreases below a range about a spindle torque setting, and driven to rotate the FSW tool with increased rotational speed relative to the workpiece when the torque increases above the range about the spindle torque setting.

6. (Currently Amended) A friction stir welding (FSW) assembly comprising:

a FSW tool ~~capable of~~ configured for performing a friction stir welding operation on a workpiece; and

a friction stir welding (FSW) device comprising an actuator, wherein the actuator is ~~capable of~~ configured for being driven to move the FSW tool relative to the workpiece such that the FSW tool is ~~capable of~~ configured for performing the friction stir welding operation, wherein the actuator comprises a plunge actuator ~~capable of~~ configured for being driven to move the FSW tool along a plunge axis, wherein a torque of the actuator is ~~capable of~~ configured for being monitored in accordance with one or more numerical control instructions designed for machining components, wherein the actuator is ~~capable of~~ configured for being driven such that the torque is maintained within a range about a torque setting, and wherein the plunge actuator is ~~capable of~~ configured for being driven to move the FSW tool into further contact with the workpiece when the torque decreases below a range about a plunge torque setting, and driven to move the FSW tool into reduced contact with the workpiece when the torque increases above the range about the plunge torque setting.

7. (Cancelled)

8. (Currently Amended) A FSW assembly according to Claim 6, wherein when the torque decreases below the range about the plunge torque setting, the plunge actuator is ~~capable of~~ configured for being driven to move the FSW tool into further contact with the workpiece until one of the torque increases to within the range and the FSW tool has moved more than a defined distance along the plunge axis.

9. (Currently Amended) A FSW assembly according to Claim 6, wherein the actuator comprises at least one weld actuator ~~capable of~~ configured for being driven to move the FSW tool along a weld path, wherein the at least one weld actuator is ~~capable of~~ configured for being driven to move the FSW tool with increased speed along the weld path when at least one torque of the at least one weld actuator decreases below a range about at least one weld torque setting, and driven to move the FSW tool with decreased speed along the weld path when the at least one torque increases above the range about the at least one weld torque setting.

10. (Currently Amended) A FSW assembly according to Claim 6, wherein the actuator comprises a spindle actuator ~~capable of~~ configured for being driven to rotate the FSW tool relative to the workpiece, wherein the spindle actuator is ~~capable of~~ configured for being driven to rotate the FSW tool with decreased rotational speed relative to the workpiece when the torque decreases below a range about a spindle torque setting, and driven to move the FSW tool with increased rotational speed relative to the workpiece when the torque increases above the range about the spindle torque setting.

11. (Currently Amended) A controller comprising:

a processing element ~~capable of~~ configured for driving an actuator to move a friction stir welding (FSW) tool relative to a workpiece such that the FSW tool is ~~capable of~~ configured for performing a friction stir welding operation on the workpiece, wherein the actuator comprises a

plunge actuator ~~capable of~~ configured for moving the FSW tool along a plunge axis, wherein the controller is ~~capable of~~ configured for monitoring a torque of the actuator in accordance with one or more numerical control instructions designed for machining components, wherein the controller is ~~capable of~~ configured for driving the actuator such that the torque is maintained within a range about a torque setting, and wherein the processing element is ~~capable of~~ configured for driving the plunge actuator to move the FSW tool into further contact with the workpiece when the torque decreases below a range about a plunge torque setting, and driving the plunge actuator to move the FSW tool into reduced contact with the workpiece when the torque increases above the range about the plunge torque setting.

12. (Cancelled)

13. (Currently Amended) A controller according to Claim 11, wherein the processing element is ~~capable of~~ configured for driving the plunge actuator such that, when the torque decreases below the range about the plunge torque setting, the plunge actuator moves the FSW tool into further contact with the workpiece until one of the torque increases to within the range and the FSW tool has moved more than a defined distance along the plunge axis.

14. (Currently Amended) A controller according to Claim 11, wherein the actuator comprises at least one weld actuator ~~capable of~~ configured for moving the FSW tool along a weld path, wherein the processing element is ~~capable of~~ configured for driving the at least one weld actuator to move the FSW tool with increased speed along the weld path when at least one torque of the at least one weld actuator decreases below a range about at least one weld torque setting, and driving the at least one weld actuator to move the FSW tool with decreased speed along the weld path when the torque increases above the range about the at least one weld torque setting.

15. (Currently Amended) A controller according to Claim 11, wherein the actuator comprises a spindle actuator ~~capable of~~ configured for rotating the FSW tool relative to the

workpiece, wherein the processing element is ~~capable of~~ configured for driving the spindle actuator to rotate the FSW tool with decreased rotational speed relative to the workpiece when the torque decreases below a range about a spindle torque setting, and driving the spindle actuator to rotate the FSW tool with increased rotational speed relative to the workpiece when the torque increases above the range about the spindle torque setting.

16. (Currently Amended) A method of friction stir welding a workpiece comprising:

driving an actuator to move a friction stir welding (FSW) tool relative to the workpiece such that the FSW tool performs a friction stir welding operation on the workpiece, wherein the actuator comprises a plunge actuator ~~capable of~~ configured for moving the FSW tool along a plunge axis;

monitoring a torque of the actuator in accordance with one or more numerical control instructions designed for machining components; and

controlling the torque such that the torque is maintained within a range about a torque setting as the actuator is driven to move the FSW tool, wherein controlling a torque comprises controlling a torque of the plunge actuator such that the plunge actuator is driven to move the FSW tool into further contact with the workpiece when the torque decreases below a range about a plunge torque setting, and driven to move the FSW tool into reduced contact with the workpiece when the torque increases above the range about the plunge torque setting.

17. (Cancelled)

18. (Previously Presented) A method according to Claim 16, wherein controlling a torque comprises controlling a torque of the plunge actuator such that, when the torque decreases below the range about the plunge torque setting, the actuator is driven to move the FSW tool into further contact with the workpiece until one of the torque increases to within the range and the FSW tool has moved more than a defined distance along the plunge axis.

19. (Currently Amended) A method according to Claim 16, wherein the actuator comprises at least one weld actuator ~~capable of~~ configured for moving the FSW tool along a weld path, wherein controlling a torque comprises controlling at least one torque of the at least one weld actuator such that the at least one weld actuator is driven to move the FSW tool with increased speed along the weld path when the at least one torque decreases below a range about at least one weld torque setting, and driven to move the FSW tool with decreased speed along the weld path when the at least one torque increases above the range about the at least one weld torque setting.

20. (Currently Amended) A method according to Claim 16, wherein the actuator comprises a spindle actuator ~~capable of~~ configured for rotating the FSW tool relative to the workpiece, wherein controlling a torque comprises controlling the torque of the spindle actuator such that the spindle actuator is driven to move the FSW tool with decreased rotational speed relative to the workpiece when the torque decreases below a range about a spindle torque setting, and driven to move the FSW tool with increased rotational speed relative to the workpiece when the torque increases above the range about the spindle torque setting.

21. (New) A friction stir welding system according to Claim 1, wherein the friction stir welding device comprises a computer numerically controlled mill machine designed for machining components.

22. (New) A FSW assembly according to Claim 6, wherein the FSW device comprises a computer numerically controlled mill machine designed for machining components.

23. (New) A controller according to Claim 11, wherein the actuator comprises an actuator of a computer numerically controlled mill machine designed for machining components.

24. (New) A method according to Claim 16, wherein driving an actuator comprises driving an actuator of a computer numerically controlled mill machine designed for machining components.